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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|-----------------------|
| 09/251,988 | 02/17/1999 | BRIAN SAMUEL BEAMAN | Y0998-088 | 3930 |
| 7590 | 09/22/2004 | | EXAMINER | |
| IBM CORPORATION INTELLECTUAL PROPERTY LAW DEPT P O BOX 218 YORKTOWN HEIGHTS, NY 10598 | | | | HOLLINGTON, JERMELE M |
| | | ART UNIT | PAPER NUMBER | 2829 |

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/251,988 | BEAMAN ET AL. |
| | Examiner | Art Unit |
| | Jermele M. Hollington | 2829 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 23 October 2003.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-27 and 41-54 is/are pending in the application.
 4a) Of the above claim(s) 28-40 and 55-57 is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-27 and 41-54 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>04/03</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-27 and 41-47 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-27, 41-47 and 52 of copending Application No. 10/145,661. Although the conflicting claims are not identical, they are not patentably distinct from each other because it would obvious to one of ordinary skill in the art to have the elongated electrical conductors of the copending application to be compliant and having end at a non-orthogonal angle.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-27 and 41-52 and 54 are rejected under 35 U.S.C. 102(e) as being anticipated by Beaman et al (5371654).

Regarding claims 1 and 41, Beaman et al discloses [see fig. 6] an interconnection package comprising a substrate (94) having a surface (102) [see column 6 line 44], a plurality of compliant elongated electrical conductors (84) [see column 6 lines 28-31 and line 60] extending away from the surface (102) wherein the conductors (84) having a first end (represented as contact end 90) affixed to the surface (102) and a second end (represented as contact end 92) projecting away from said surface (102), there being a plurality of said second ends (92) and a

means (represented as connection means 80) [see column 6 lines 59-66] for positioning and maintaining said plurality of second ends (92) in substantially fixed positions.

Regarding claim 2, the first end (90) is affixed to said surface (102) at an electrical contact location (104) [see column 6 lines 42-43].

Regarding claim 3, the means (80) for positioning and maintaining is a plurality of sheets of material each inherently having a plurality of opening [not shown] therein through which said second ends (92) project.

Regarding claim 4, the second end (92) is inherently a structure selected from the group consisting of a protuberance and a sharp spike [see column 11 lines 47-56].

Regarding claim 5, the plurality of sheets (80) is formed from a material selected from the group consisting of a rigid material and a compliant [see column 6 lines 58-66].

Regarding claim 6, the sheets (80) inherently comprise a plurality of openings [not shown], said elongated electrical conductors (84) are disposed against the sides (86 and 88) [see fig. 5] or said openings [not shown] of at least two of said sheets.

Regarding claim 7, the sheets (80) are spaced apart from said surface (102) by a flexible support (82).

Regarding claim 8, the flexible support (82) is selected from the group consisting of a spring and an elastomeric material [see column 6 lines 41-43].

Regarding claim 9, the elongated electrical conductors (84) inherently have a shape selected from the group consisting of linear, piece wise linear, curved and combinations thereof [see column 11 lines 52-56].

Regarding claim 10, the sheet (80) and the flexible support (82) forms a space containing the plurality of elongated electrical conductors (84) [see fig. 6 and column 6 lines 28-31].

Regarding claim 11, the space is filled with a flexible material [via elastomeric material 82].

Regarding claim 12, the flexible material is an elastomeric material (82) [see column 6 lines 29].

Regarding claim 13, the sheets (80) is a sheet of electrically conductive material which inherently has a top surface (not number) and a bottom surface (not number) and said openings (not number) have side walls (86 and 88), a dielectric material inherently coats said top surface (not number) and said bottom surface (not number) and said side wall (86 and 88).

Regarding claims 14-15, the plurality of elongated electrical conductors (84) is distributed into plurality of groups that are arranged in an array [see figs. 6-8].

Regarding claim 16, the structure is a probe for an electronic device [see Abstract].

Regarding claims 17-19, the electronic device is selected from the group consisting on an integrated circuit chip [not shown but see column 1 lines 64-66] on a packaging substrate (94) containing a wafer (not number).

Regarding claim 20, the structure has means (80) for holding and moving the structure and means (94) for applying electrical signals to the elongated electrical conductors (84).

Regarding claim 21, the protuberance is sphere like [see column 11 lines 47-56].

Regarding claims 22-27 and 47, the means (80) for positioning and maintaining is a plurality of sheets of material each inherently having a plurality of opening (not number) therein through which said second ends (92) project, the plurality of sheets (80) are formed from a

material selected from the group consisting of a rigid material and a compliant [see column 6 lines 58-66 and column 11 lines 52-56], the sheets (80) are a sheet of electrically conductive material which inherently has a top surface (not number) and a bottom surface (not number) and said openings (not number) have a side wall (86 and 88), a dielectric material inherently coats said top surface (not number) and said bottom surface (not number) and said side wall (86 and 88), the sheet (80) and the flexible support (82) forms a space containing the plurality of elongated electrical conductors (84) [see column 6 lines 28-31].

Regarding claims 42-43, the sheet (80) is inherently formed and material selected from the groups consisting of Invar, Cu/Invar/Cu, molybdenum and polyimides [see column 3 and column 11 lines 52-56].

Regarding claim 44, the dielectric material is selected from the group consisting of a ceramic and a glass [see column 3 lines 26-28 and column 11 lines 52-56].

Regarding claims 45-46, the elongated conductor (84) is coated with a hard coat that is from a group consisting of materials as claimed (see column 3 lines 43-47).

Regarding claims 48 and 50, the compliant elongated electrical conductor (84) is shaped to compliantly respond when the compliant elongated conductors (84) are pressed against and withdraw from a surface, which the second ends (92) are pressed [see col. 6 lines 47-51].

Regarding claims 49 and 51, the means for maintaining (80) comprises a sheet of material

Regarding claim 52, Beaman et al discloses [see fig. 6] an interconnection package comprising a substrate (94) having a surface (102) [see column 6 line 44], a plurality of elongated electrical conductors (84) [see column 6 lines 28-31 and line 60] extending away from

the surface (102) wherein the conductors (84) having a first end (represented as contact end 90) affixed to the surface (102) and a second end (represented as contact end 92) projecting away from said surface (102), the second end (92) is at a non-orthogonal angle with respect to the surface (105) [see col. 6 , lines 47-51], there being a plurality of said second ends (92) and a means (represented as connection means 80) [see column 6 lines 59-66] for positioning and maintaining said plurality of second ends (92) in substantially fixed positions.

Regarding claim 54, Beaman et al disclose [see Fig. 5] the elongated electrical conductor (84) comprises a bend.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beaman et al (5371654).

Regarding claim 53, Beaman et al disclose conductors (84) having a first end (represented as contact end 90) and a second end (represented as contact end 92) wherein the second end (92) is at a non-orthogonal angle with respect to the surface (105) [see col. 6, lines 47-51]. However, Beaman et al do not disclose the non-orthogonal angle of the second end being between 5-60 degrees. It is well known to make the non-orthogonal angle of the second end at different degrees where needed through routine experimentation (see MPEP 2144.05; *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235(CCPA 1955)). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the non-orthogonal angle of the second end of Beaman et al at different degrees since the different degrees would provide support in a selective manner to each individual user during testing.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shih et al (6286208) and Beaman et al (6295729, 6452406, 6526655, 6528984 and 6708403) disclose a method and apparatus for a wafer probe assembly.

9. Applicant's arguments filed Oct. 23, 2004 have been fully considered but they are not persuasive.

Regarding claim 1-27 and 41-54, the applicants' state: "Since the claim of priority of the present application has been amended to be a C-I-P of 5,371,654, and since the entire content thereof is incorporated by reference in the present application, US 5,371,654 is not a 102(e) reference. Note Applicants' Supplemental Petition for Corrected Filing Receipt submitted herewith."

In response to the above arguments, it appears that the office has not made a decision of the supplemental petition. Therefore, the reference used by the examiner is still valid at this time. Since no other arguments were presented in the amendment filed on Oct. 23, 2003, the following is being given.

10. **THIS ACTION IS MADE FINAL.** Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jermele M. Hollington whose telephone number is (571) 272-1960. The examiner can normally be reached on M-F (9:00-4:30 EST) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Tokar can be reached on (517) 272-1812. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jermele M. Hollington
Examiner
Art Unit 2829

/J.M.H.
JMH
September 14, 2004

E.S.P.
EVAN PERT
PRIMARY EXAMINER